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(54) Title: COATING COMPOSITION FOR METAL SUBSTRATES

(57) Abstract: The present invention provides novel packaging articles, e.g., food and beverage cans. Preferred cans typically comprise a body portion and an end portion, wherein at least one of the body and end portions are aluminum and are coated on at least one major surface with a coating composition of the present invention. Suitable coating compositions of the present invention comprise: one or more polyester resins, wherein at least one of the polyester resins has a glass transition temperature ("T<sub>g</sub>") less than about 50 °C, and wherein the polyester resin is formed by the reaction of one or more polyacid molecules and one or more polyol molecules; and a crosslinker. Preferred compositions are substantially free of mobile BPA and aromatic glycidyl ether compounds, e.g., BADGE, BFDGE and epoxy novalacs (e.g., NOGE) and more preferred compositions are also substantially free of bound BPA and aromatic glycidyl ether compounds. In more preferred embodiments (e.g., alcoholic beverage cans), the polyol molecules used to make the polyester resin are substantially free of NPG. The present invention also provides a method of making such cans.

WO 2004/013240 A1

## A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	<p>EP 1 277 814 A (DSM NV) 22 January 2003 (2003-01-22)</p> <p>page 2, line 44 - line 58; claims 1,3 page 3, paragraph 22 page 4, line 31 - line 55 page 5, line 39 - line 53 page 7, line 51,58</p> <p style="text-align: center;">--- -/--</p>	<p>1-7, 10-15, 18-25</p>

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 964 038 A (DEXTER CORP) 15 December 1999 (1999-12-15)  claims 1-5,29,33 page 2, paragraph 1 page 7, paragraph 49 -page 12 page 13, paragraph 58 -page 14 examples 1,2 table 1 page 18, paragraphs 89,90 table 4	1-7, 10-15, 18-25
X	US 6 235 102 B1 (SEIBEL LAWRENCE P ET AL) 22 May 2001 (2001-05-22) claim 1 column 5, line 32 - line 40 column 11, line 24 - line 30 column 14, line 67 column 15, line 16; example 3 column 7, line 19	1-7, 10-25
X	WO 00 55267 A (VALSPAR CORP) 21 September 2000 (2000-09-21) claims 1,9,50 page 48, line 26 - line 28	1-16, 18-25
Y	DE 199 12 794 A (GRACE W R & CO) 21 September 2000 (2000-09-21) claims 1,8,10,15 page 2, line 1, paragraph 3 example 1 page 4, line 48 - line 50	1-25
Y	DE 40 10 167 A (BASF LACKE & FARBEN) 2 October 1991 (1991-10-02) claims 1,11 page 2, line 6 - line 19 page 2, line 65 -page 3, line 5 page 5, line 30 - line 40 example 1 table 1	1-25
A	US 3 954 899 A (CHANG WEN-HSUAN ET AL) 4 May 1976 (1976-05-04) claims 9,3,1	1-25
X	DATABASE WPI Week 9622 Derwent Publications Ltd., London, GB; AN 1996-217374 XP002263882 & JP 08 081652 A (TOYOB0) abstract	22

# INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1277814	A	22-01-2003	EP 1277814 A1	22-01-2003
			WO 03008512 A1	30-01-2003
EP 0964038	A	15-12-1999	US 5994462 A	30-11-1999
			AT 238396 T	15-05-2003
			DE 69813783 D1	28-05-2003
			EP 0964038 A2	15-12-1999
US 6235102	B1	22-05-2001	US 2001053449 A1	20-12-2001
WO 0055267	A	21-09-2000	US 6458439 B1	01-10-2002
			AU 3628200 A	04-10-2000
			EP 1165711 A1	02-01-2002
			WO 0055267 A1	21-09-2000
DE 19912794	A	21-09-2000	DE 19912794 A1	21-09-2000
			AU 2671500 A	04-10-2000
			CA 2363482 A1	21-09-2000
			CN 1348486 T	08-05-2002
			WO 0055265 A1	21-09-2000
			EP 1163305 A1	19-12-2001
			JP 2002539319 T	19-11-2002
DE 4010167	A	02-10-1991	DE 4010167 A1	02-10-1991
US 3954899	A	04-05-1976	US 3962522 A	08-06-1976
JP 8081652	A	26-03-1996	NONE	